

June 21, 2001

Mr. Steve Wilkey
Timberline Products
53062 Faith Avenue
Elkhart, Indiana 46515

Re: Registered Construction and Operation Status,
039-13657-00457

Dear Mr. Wilkey:

The renewal application from Timberline Products, received on December 21, 2000, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-5.5, it has been determined that the following wood furniture manufacturing source, located at 53062 Faith Avenue, Elkhart, Indiana, is classified as registered:

- (a) One (1) paint booth, known as PB1, consisting of two (2) airless spray guns and (1) HVLP spray gun, installed in 1985, equipped with dry filters for particulate matter overspray control, exhausted to stack SPB, capacity: 116 pounds of wood per hour.
- (b) One (1) woodworking operation, known as WW1, consisting of various woodworking equipment, installed in 1985, equipped with a baghouse for particulate control, exhausted to Bags, capacity: 116 pounds of wood per hour.
- (c) One (1) natural gas-fired boiler, known as Boiler 1, installed in 1985, rated at 0.27 million British thermal units per hour.

The following conditions shall be applicable:

- 1. Pursuant to 326 IAC 5-1-2 (Opacity Limitations) except as provided in 326 IAC 5-1-3 (Temporary alternative opacity limitations), opacity shall meet the following:
 - (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
 - (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor in a six (6) hour period.
- 2. Any change or modification which may increase the potential to emit a combination of HAPs, VOC, PM or PM₁₀ to twenty five (25) tons per year or a single HAP to ten (10) tons per year from this source shall require approval from IDEM, OAQ prior to making the change.
- 3. Pursuant to 326 IAC 6-2-4 (Particulate Emissions Limitations for Facilities Constructed after September 21, 1983) the one (1) boiler, known as Boiler 1, shall be limited to 0.6 pounds of particulate matter emitted per million British thermal units of heat input.
- 4. Pursuant to 326 IAC 6-3-2 (Process Operations)
 - (a) The particulate matter (PM) from WW1 shall be limited to 0.609 pounds per hour based on a process weight rate of 116 pounds of wood per hour. The limit was

calculated by the following:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour.}$$

The bags shall be in operation at all times WW1 is in operation, in order to comply with this limit.

- (b) The particulate matter (PM) from PB1 shall be limited by the following:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour.}$$

The dry filters shall be in operation at all times PB1 is in operation, in order to comply with this limit.

5. Visible Emissions Notations

- (a) Daily visible emission notations of WW1 stack exhaust shall be performed during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed.

6. Baghouse Inspections

An inspection shall be performed each calendar quarter of all bags controlling the wood-working operation when venting to the atmosphere. A baghouse inspection shall be performed within three months of redirecting vents to the atmosphere and every three months thereafter. Inspections are optional when venting to the indoors. All defective bags shall be replaced.

7. D.2.7 Broken or Failed Bag Detection

In the event that bag failure has been observed:

- (a) The affected compartments will be shut down immediately until the failed units have been repaired or replaced. Within eight (8) hours of the determination of failure, response steps according to the timetable described in the Compliance Response Plan shall be initiated. For any failure with corresponding response steps and timetable not described in the Compliance Response Plan, response steps shall be devised within eight (8) hours of discovery of the failure and shall include a timetable for completion. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).
- (b) For single compartment baghouses, failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

8. Record Keeping Requirements

Although the source is not subject to the requirements of 40 CFR 63, Subpart JJ (National Emission Standards for Wood Furniture Operations), the source shall keep records to show that they are a minor source of HAPs. To document compliance with this Condition, the Permittee shall maintain records in accordance with (1) through (5) below. Records maintained for (1) through (5) shall be taken monthly and shall be complete and sufficient to maintain the status of a minor HAPs source.

- (1) The amount and HAP content of each coating material and solvent used. Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount used. Solvent usage records shall differentiate between those added to coatings and those used as cleanup solvents;
- (2) A log of the dates of use;
- (3) The cleanup solvent usage for each month;
- (4) The total HAP usage for each month; and
- (5) The weight HAPs emitted for each compliance period.

This registration is registration renewal issued to this source. The source may operate according to 326 IAC 2-5.5.

An authorized individual shall provide an annual notice to the Office of Air Quality that the source is in operation and in compliance with this registration pursuant to 326 IAC 2-5.5-4(a)(3)). The annual notice shall be submitted to:

**Compliance Data Section
Office of Air Quality
100 North Senate Avenue
P.O. Box 6015
Indianapolis, IN 46206-6015**

no later than March 1 of each year, with the annual notice being submitted in the format attached.

An application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source.

Sincerely,

Original Signed by Paul Dubenetzky
Paul Dubenetzky, Chief
Permits Branch
Office of Air Quality

PMC/MES

cc: File - Elkhart County
Elkhart County Health Department
Air Compliance - Greg Wingstrom
Permit Tracking - Janet Mobley
Air Programs Section- Michele Boner

Registration Annual Notification

This form should be used to comply with the notification requirements under 326 IAC 2-5.1-2(f)(3)

Company Name:	Timberline Products
Address:	53062 Faith Avenue
City:	Elkhart, Indiana 46515
Authorized individual:	Steve Wilkey
Phone #:	219-674-8357
Registration #:	039-13657-00457

I hereby certify that Timberline Products is still in operation and is in compliance with the requirements of Registration **039-13657-00457**.

Name (typed):
Title:
Signature:
Date:

Indiana Department of Environmental Management Office of Air Quality

Technical Support Document (TSD) for a Registration Renewal

Source Background and Description

Source Name:	Timberline Products
Source Location:	53062 Faith Avenue, Elkhart Indiana 46515
County:	Elkhart
SIC Code:	2499
Operation Permit No.:	Registration 039-13657-00457
Permit Reviewer:	Paula M. Cignitore

The Office of Air Quality (OAQ) has reviewed a renewal application from Timberline Products relating to the operation of a wood furniture manufacturing source.

Permitted Emission Units and Pollution Control Equipment

The source consists of the following permitted emission units and pollution control devices:

- (a) One (1) paint booth, known as PB1, consisting of two (2) airless spray guns and (1) HVLP spray gun, installed in 1985, equipped with dry filters for particulate matter overspray control, exhausted to stack SPB, capacity: 116 pounds of wood per hour.
- (b) One (1) woodworking operation, known as WW1, consisting of various woodworking equipment, installed in 1985, equipped with a baghouse for particulate control, exhausted to Bags, capacity: 116 pounds of wood per hour.
- (c) One (1) natural gas-fired boiler, known as Boiler 1, installed in 1985, rated at 0.27 million British thermal units per hour.

Unpermitted Emission Units and Pollution Control Equipment

There are no unpermitted facilities operating at this source during this review process.

New Emission Units and Pollution Control Equipment

There are no new facilities/units requiring approval during this review.

Existing Approvals

The source has been operating under previous approvals including, but not limited to, the following:

Registration CP 039-8535-00457, issued October 9, 1997.

All conditions from previous approvals were incorporated into this permit except the following:

CP 039-8535-00457, Condition 3

PM Limitations

That pursuant to 326 IAC 6-3 (Process Operations), the baghouse shall be in operation at all times when woodworking equipment is in operation, and shall not exceed the allowable particulate matter (PM) emission rate of 2.85 pounds per hour.

The following condition replaces the above condition. The new condition corrects an error in the process weight rate provided in the original application.

4. Pursuant to 326 IAC 6-3-2 (Process Operations)

- (a) The particulate matter (PM) from WW1 shall be limited to 0.609 pounds per hour based on a process weight rate of 116 pounds of wood per hour. The limit was calculated by the following:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour.}$$

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (EF)
SPB	PB1	4.0	2.8	2,175	68
Bags	WW1	11.0	1.0	1,000	68

Enforcement Issue

There are no enforcement actions pending.

Recommendation

The staff recommends to the Commissioner that the operation be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on December 21, 2000, with additional information received on May 18, 2001.

Emission Calculations

See pages 1 through 5 of 5 of Appendix A of this document for detailed emissions calculations.

Potential To Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, the department, or the appropriate local air pollution control agency.”

Pollutant	Potential To Emit (tons/year)
PM	10.1
PM ₁₀	10.1
SO ₂	0.001
VOC	5.55
CO	0.099
NO _x	0.118

HAPs	Potential To Emit (tons/year)
Benzene	0.000002
Dichlorobenzene	0.000001
Formaldehyde	0.004
Hexane	0.002
Toluene	1.38
Lead	0.0000006
Cadmium	0.000001
Chromium	0.000002
Manganese	0.0000005
Nickel	0.000003
MIBK	0.003
MEK	0.307
Xylene	0.354
Methanol	0.025
TOTAL	2.08

The potential to emit (as defined in 326 IAC 2-5.1-2) of PM, PM₁₀ and VOC are less than twenty-five (25) tons per year and greater than five (5) tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-5.1-2.

Actual Emissions

No previous emission data has been received from the source.

Limited Potential to Emit

The table below summarizes the total potential to emit, reflecting all limits, of the significant emission units.

	Limited Potential to Emit (tons/year)						
Process/facility	PM	PM ₁₀	SO ₂	VOC	CO	NO _x	HAPs
PB1	0.031	0.031	0.00	5.54	0.00	0.00	2.08
WW1	2.67	2.67	0.00	0.00	0.00	0.00	0.00
Boiler 1	0.002	0.009	0.001	0.007	0.099	0.118	0.002
Total Emissions	2.70	2.71	0.001	5.55	0.099	0.118	2.08

Note: The PM and PM₁₀ values represent the 326 IAC 6-3-2 allowable.

County Attainment Status

The source is located in Elkhart County.

Pollutant	Status
PM ₁₀	attainment
SO ₂	attainment
NO ₂	attainment
Ozone	maintenance
CO	attainment
Lead	attainment

- (a) Volatile organic compounds (VOC) and oxides of nitrogen (NO_x) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Elkhart County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO_x emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR Part 52.21.
- (b) Elkhart County has been classified as attainment or unclassifiable for all remaining criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

(c) Fugitive Emissions

Since this type of operation is not one of the 28 listed source categories under 326 IAC 2-2, 40 CFR Part 52.21, or 326 IAC 2-3 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are not counted toward determination of PSD and Emission Offset applicability.

Source Status

Existing Source PSD, Part 70 or FESOP Definition (emissions after controls, based on 8,760 hours of operation per year at rated capacity and/ or as otherwise limited):

Pollutant	Emissions (tons/yr)
PM	2.70
PM ₁₀	2.71
SO ₂	0.001
VOC	5.55
CO	0.099
NO _x	0.118

- (a) This existing source is **not** a major stationary source because no attainment regulated pollutant is emitted at a rate of two hundred-fifty (250) tons per year or more, and it is not in one of the 28 listed source categories.
- (b) These emissions were based on the application submitted by the company in the submitted Part 70 application.

326 IAC 2-7 (Part 70 Permit Program)

This existing source, including the emissions from this permit CP 039-8535-00457, is still not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

- (a) each criteria pollutant is less than one hundred (100) tons per year,
- (b) a single hazardous air pollutant (HAP) is less than ten (10) tons per year, and
- (c) any combination of HAPS is less than 25 tons/year.

This status is based on all the air approvals issued to the source. This status has been verified by the OAQ inspector assigned to the source.

Federal Rule Applicability

- (a) The one (1) boiler is not subject to the requirements of New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) Subparts D, Da, Db and Dc because it is rated less than 10.0 million British thermal units per hour.

- (b) The one (1) paint booth is not subject to the requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs), Subpart JJ, 40 CFR Part 63.800 because the potential to emit HAPs are less than the major source HAPs levels of 10 and 25 tons per year for single and combined HAPs, respectively.

State Rule Applicability - Entire Source

326 IAC 2-6 (Emission Reporting)

This source is located in Elkhart County and the potential to emit PM, PM₁₀ and VOC is less than ten (10) tons per year, therefore, 326 IAC 2-6 does not apply.

326 IAC 5-1 (Opacity)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary alternative opacity limitations), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of forty percent (40%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR Part 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

State Rule Applicability - Individual Facilities

326 IAC 6-2-4 (Particulate Emissions Limitations for Facilities Constructed after September 21, 1983)

The one (1) boiler, known as Boiler 1, rated at 0.27 million British thermal units per hour, constructed in 1985, must comply with the requirements of 326 IAC 6-2-4. Since Boiler 1 is rated at less than 10 million British thermal units per hour, Boiler 1 is limited to 0.6 pounds of particulate matter emitted per million British thermal units of heat input.

326 IAC 6-3-2 (Process Operations)

- (a) The particulate matter (PM) from WW1 shall be limited to 0.609 pounds per hour based on a process weight rate of 116 pounds of wood per hour. The limit was calculated by the following:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

The bags shall be in operation at all times WW1 is in operation, in order to comply with this limit.

- (b) The particulate matter (PM) from PB1 shall be limited by the following:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

The dry filters shall be in operation at all times PB1 is in operation, in order to comply with this limit.

326 IAC 8-2-12 (Wood Furniture and Cabinet Coating)

Since the potential to emit VOC is less than 25 tons per year from paint booth PB1 and it was constructed in 1985, the requirements of this rule are not applicable.

There are no other 326 IAC 8 rules that apply to this source.

Conclusion

The operation of this wood furniture manufacturing source shall be subject to the conditions of the attached proposed Registration Renewal 039-13657-00457.

**Appendix A: Emissions Calculations
VOC and Particulate
From Surface Coating Operations**

Page 1 of 5 TSD App A

Company Name: Timberline Products
Address City IN Zip: 53062 Faith Avenue, Elkhart, Indiana 46515
Reg: 039-13657
Plt ID: 039-00457
Reviewer: Paula M. Cognitore
Date: December 21, 2000

Material	Density (lbs/gal)	Weight % Volatile (H2O & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non- Volatiles (solids)	Gal of Mat. (gal/unit)	Maximum (units/ hour)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC (pounds per hour)	Potential VOC (pounds per day)	Potential VOC (tons per year)	Particulate Potential (tons/yr)	lbs VOC/gal solids	Transfer Efficiency	Sub- strate
PB1																	
Clear Gloss Lacquer W-1050-L	7.40	77.6%	0.0%	77.6%	0.0%	16.4%	0.000610	116	5.74	5.74	0.406	9.74	1.78	0.13	35.01	75%	wood
Satin G-WS1969	7.50	87.3%	0.0%	87.3%	0.0%	18.4%	0.000066	116	6.55	6.55	0.050	1.21	0.22	0.01	35.58	75%	wood
Vinyl Sealer W-730-VS	7.50	81.6%	0.0%	81.6%	0.0%	12.7%	0.000498	116	6.12	6.12	0.353	8.47	1.55	0.09	48.19	75%	wood
Catalyst 999-17	7.42	81.8%	0.0%	81.8%	0.0%	11.8%	0.000079	116	6.07	6.07	0.055	1.33	0.24	0.01	51.39	75%	wood
Plasticlear 421-40	8.45	35.0%	0.0%	35.0%	0.0%	0.0%	0.000560	116	2.96	2.96	0.192	4.61	0.84	0.39	na	75%	wood
Clean-up																	
Lacquer Thinner	7.02	100.0%	0.0%	100.0%	0.0%	0.0%	0.000187	116	7.02	7.02	0.152	3.65	0.67	0.00	na	100%	wood
Toluene	7.26	100.0%	0.0%	100.0%	0.0%	0.0%	0.000066	116	7.26	7.26	0.056	1.34	0.24	0.00	na	100%	wood
Misc.																	
Solvent-free Putty	14.85	0.07%	0.0%	0.07%	0.0%	99.30%	0.00004	1.000	0.01	0.01	0.00	0.00	0.0000016	0.00	0.01	100%	wood
Solvent-free Putty	14.85	0.07%	0.0%	0.07%	0.0%	99.30%	0.00046	1.000	0.01	0.01	0.00	0.00	0.0000208	0.00	0.01	100%	wood
Famosolvent	6.68	98.70%	35.0%	63.7%	0.0%	1.30%	0.00037	1.000	4.26	4.26	0.00	0.04	0.0069	0.00	327.32	0%	wood

PM Control Efficiency 95.00%

State Potential Emissions

Add worst case coating to all solvents

**Uncontrolled
Controlled**

1.27

30.4

5.54

**0.627
0.031**

METHODOLOGY

Pounds of VOC per Gallon Coating less Water = (Density (lbs/gal) * Weight % Organics) / (1-Volume % water)
Pounds of VOC per Gallon Coating = (Density (lbs/gal) * Weight % Organics)
Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lbs/gal) * Gal of Material (gal/unit) * Maximum (units/hr)
Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lbs/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (24 hr/day)
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lbs/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (8760 hr/yr) * (1 ton/2000 lbs)
Particulate Potential Tons per Year = (units/hour) * (gal/unit) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) * (8760 hrs/yr) * (1 ton/2000 lbs)
Pounds VOC per Gallon of Solids = (Density (lbs/gal) * Weight % organics) / (Volume % solids)
Total = Worst Coating + Sum of all solvents used

Appendix A: Emission Calculations
HAP Emission Calculations

Page 2 of 5 TSD AppA

Company Name: Timberline Products
Address City IN Zip: 53062 Faith Avenue, Elkhart, Indiana 46515
Reg: 039-13657
Pit ID: 039-00457
Reviewer: Paula M. Cognitore
Date: December 21, 2000

Material	Density (lbs/gal)	Gallons of Material (gal/unit)	Maximum (unit/hour)	Weight % Toluene	Weight % Methanol	Weight % MIBK	Weight % MEK	Weight % Xylene	Weight % Formaldehyde	Toluene Emissions (tons/yr)	Methanol Emissions (tons/yr)	MIBK Emissions (tons/yr)	MEK Emissions (tons/yr)	Xylene Emissions (tons/yr)	Formaldehyde Emissions (tons/yr)
PB1															
Clear Gloss Lacquer W-1050-L	7.40	0.000610	116	15.00%	0.00%	0.00%	10.00%	0.00%	0.00%	0.344	0.000	0.000	0.229	0.000	0.000
Satin G-WS1969	7.50	0.000066	116	0.00%	5.00%	0.00%	0.00%	45.00%	0.00%	0.000	0.013	0.000	0.000	0.114	0.000
Vinyl Sealer W-730-VS	7.50	0.000498	116	35.00%	0.00%	0.00%	4.10%	0.00%	0.00%	0.663	0.000	0.000	0.078	0.000	0.000
Catalyst 999-17	7.42	0.000079	116	0.00%	4.04%	1.16%	0.00%	0.00%	0.00%	0.000	0.012	0.003	0.000	0.000	0.000
Plasticlear 421-40	8.45	0.000560	116	0.00%	0.00%	0.00%	0.00%	10.00%	0.17%	0.000	0.000	0.000	0.000	0.240	0.004
Clean-up															
Lacquer Thinner	7.02	0.000187	116	20.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.133	0.000	0.000	0.000	0.000	0.000
Toluene	7.26	0.000066	116	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.244	0.000	0.000	0.000	0.000	0.000
Misc.															
Solvent-free Putty	14.85	0.00004	1.000	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000
Solvent-free Putty	14.85	0.00046	1.000	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000	0.000	0.000	0.000	0.000	0.000
Famosolvent	6.68	0.00037	1.000	4.00%	0.00%	0.00%	36.00%	0.00%	0.00%	0.0004	0.000	0.000	0.004	0.000	0.000
Individual Total										1.38	0.025	0.003	0.307	0.354	0.004
Overall Total										2.08					

METHODOLOGY

HAPS emission rate (tons/yr) = Density (lbs/gal) * Gal of Material (gal/unit) * Maximum (unit/hr) * Weight % HAP * 8760 hrs/yr * 1 ton/2000 lbs

**Appendix A: Emission Calculations
Woodworking Operations**

Company Name: Timberline Products
Address City IN Zip: 53062 Faith Avenue, Elkhart, Indiana 46515
Registration: 039-13657
Plt ID: 039-00457
Reviewer: Paula M. Cognitore
Date: December 21, 2000

Wood Purchases in 1996

Board ft	Species	Cu ft/ board ft	Total ft ³	Lbs/cu ft	Total lbs wood in 1996	Total tons wood in 1996
24796	Soft Maple	0.0833	2066	35.0	72322	36
17041	Oak	0.0833	1420	45.0	63904	32
23947	Walnut	0.0833	1996	38.0	75832	38
7770	Ash	0.0833	647	45.0	29137	15
73554					241195	121

Particulate Generated from Cutting

Using 1 cut per board foot, with 0.125" width reduced to particulate (width of cut with saw blade):
2 inches times 6 inches times 0.125 inches times total board feet:

110331 cubic inches of wood reduced to particulate from cutting operations on saws
63.8 cubic feet of wood reduced to particulate from cutting operations on saws
45.0 lbs per cubic foot of wood (max)
2873 lbs of wood reduced to particulate from cutting operations on saws
1.44 tons of wood reduced to particulate from cutting operations on saws

Particulate Generated from Sanding

Sanding 1 side of each piece of wood to a depth of 0.01" (calculated per board foot)
(2 inches times 12 inches) plus (6 inches times 12 inches), times 0.01", times total board feet

70612 cubic inches of wood reduced to particulate from cutting operations on saws
40.9 cubic feet of wood reduced to particulate from sanding
45.0 lbs per cubic foot of wood (max)
1839 lbs of wood reduced to particulate from sanding
0.919 tons of wood reduced to particulate from sanding

Actual Particulate Generated (2080 hours)

4712	pounds/year	95.00%	Capture efficiency
2.36	tons/yr	2.24	Actual tons delivered to dust collector

Potential to Emit Before Control (tons/yr): 9.43

**Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
Small Industrial Boiler**

**Company Name: Timberline Products
Address City IN Zip: 53062 Faith Avenue, Elkhart, Indiana 46515
Registration: 039-13657
Plt ID: 039-00457
Reviewer: Paula M. Cognitore
Date: December 21, 2000**

Heat Input Capacity
MMBtu/hr

Potential Throughput
MMCF/yr

0.270

2.37

Emission Factor in lb/MMCF	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
	1.9	7.6	0.6	100.0	5.5	84.0
Potential Emission in tons/yr	0.002	0.009	0.001	**see below	0.007	0.099

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.

**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Note: Check the applicable rules and test methods for PM and PM10 when using the above emission factors to confirm that the correct factor is used (i.e., condensable included/not included).

See page 5 for HAPs emissions calculations.

Appendix A: Emissions Calculations**Natural Gas Combustion Only****MM BTU/HR <100****Small Industrial Boiler****HAPs Emissions****Company Name: Timberline Products****Address City IN Zip: 53062 Faith Avenue, Elkhart, Indiana 46515****Registration: 039-13657****Plt ID: 039-00457****Reviewer: Paula M. Cognitore****Date: December 21, 2000****HAPs - Organics**

Emission Factor in lb/MMcf	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03
Potential Emission in tons/yr	2.483E-06	1.419E-06	8.870E-05	2.129E-03	4.021E-06

HAPs - Metals

Emission Factor in lb/MMcf	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03	Total HAPs
Potential Emission in tons/yr	5.913E-07	1.301E-06	1.656E-06	4.494E-07	2.483E-06	0.002

Methodology is the same as page 4.

The five highest organic and metal HAPs emission factors are provided above.

Additional HAPs emission factors are available in AP-42, Chapter 1.4.